REMARKS

This application has been reviewed in light of the Office Action dated May 22, 2007. Claims 8, 10, 11, 13-18, 39, 41, 42, and 46-50 remain pending in this application, and have been amended to define more clearly what Applicants regard as their invention. Claims 1-7, 9, 12, 19-38, 40, 43, and 51-69 have been canceled, without prejudice or disclaimer of subject matter. Claims 8, 15, 39, and 46 are in independent form. Favorable reconsideration is requested.

Applicants note with appreciation the indication that Claims 16 and 47 would be allowable if rewritten so as not to depend from a rejected claim, and with no change in scope. Claims 16 and 47 have not been so rewritten because, for the reasons given below, their base claim is believed to be allowable.

Claim 15 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner states that there is insufficient basis for the recitation of "the following iteration," and the Examiner has interpreted this recitation to mean "the next iteration." This recitation has been amended to "the next iteration." Accordingly, withdrawal of the rejection under Section 112, second paragraph, is respectfully requested.

Claims 8-14, 17, 18, 39-45, 48, and 49 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Ji* (the publication entitled "Block Permutation Coding of Images Using Cosine Transform", IEEE Trans. Communications, Vol. 43, No. 11, November 1, 1995, pp. 2833-2846). Claims 15, 46, and 50 were rejected under 35 U.S.C. § 103(a) as being obvious from *Ji*.

First, cancellation of Claims 9, 12, 40, and 43 renders the rejections of those claims moot.

Claim 8 is directed to a method of encoding digital samples of a set of data representing physical quantities, the encoding including the determination of an amplitude model and of a path between the samples of the set. The method includes determining a number of samples to encode, and constructing a list comprising the determined number of samples, classified by decreasing amplitude. The method also includes determining an initial list of samples, calculating an encoding cost as a function of the list of samples, and modifying the list of samples. The steps of calculating and modifying are reiterated to find a minimum encoding cost, and the modification of the list of samples comprises the withdrawal of the sample of least amplitude.

Among other notable features of Claim 8 are calculating an encoding cost as a function of a list of samples and modifying the list of samples, in which the steps of calculating and modifying are reiterated to find a minimum encoding cost, the modification of the list of samples comprising the withdrawal of the sample of least amplitude.

Ji, as understood by Applicants, relates to a permutation coding for image compression. More specifically, the processed image is first DCT-transformed and then each DCT block is converted into a 1-D vector corresponding to a zigzag path within the block of pixels. Thereafter, the coefficients of the vector having a significant magnitude are selected by a threshold-sampling step and preserved. At Section III, page 2835, *Li* discusses that this threshold step aims to withdraw the zero coefficients that have been yielded by the energy packing feature (EPF) of the DCT. Therefore, such threshold step

needs only to be performed once. There would be no reason why *Ji* would reiterate such step. A permutation coding step is then processed on the resulting vector. An entropy cost can be estimated on the basis of the resulting vector.

The method of Claim 8, in stark contrast, includes performing reiterations of the claimed steps of calculating and modifying, in which the modification comprises the withdrawal of the sample of least amplitude. Thus, the withdrawal of the least amplitude sample in the list is performed at each iteration. In contrast, as noted in *Ji*, the withdrawal needs only to be performed once and *Ji* therefore teaches away from the reiterating of Claim 8. Therefore, *Ji* fails to teach or suggest that the threshold-sampling step is reiterated in any subsequent step.

By virtue of the features of Claim 8, the method makes the list of samples evolving and permits the selection of a low-cost list of samples (see, e.g., page 30, lines 1-4 of the present specification[1/]) to encode the block. In *Ji*, the lower entropy cost is limited by the fact that the significant coefficients are preserved during the whole process. Therefore, the method of Claim 8 can permit a lower-cost encoding than the encoding of *Ji*.

Nothing in *Ji* would teach or suggest calculating an encoding cost as a function of a list of samples and modifying the list of samples, in which the steps of calculating and modifying are reiterated to find a minimum encoding cost, the modification of the list of samples comprising the withdrawal of the sample of least amplitude, as recited in Claim 8.

1/It is of course to be understood that the references to various portions of the present application are by way of illustration and example only, and that the claims are not limited by the details shown in the portions referred to.

Accordingly, Claim 8 is seen to be clearly allowable over *Ji*.

Independent Claim 39 recites features which are similar in many relevant respects to those discussed above with respect to Claim 8 and therefore is also believed to be patentable over *Ji* for at least the reasons discussed above.

Claim 15 is directed to a method of encoding digital samples of a set of data representing physical quantities, the encoding including the determination of an amplitude model and of a path between the samples of the set. The method includes determining a number of samples to encode, and constructing a list comprising the determined number of samples, classified by decreasing amplitude. The method further comprises an initialization of an evolutionary algorithm according to which a population of lists of samples is determined, the population comprising a predetermined number of lists, in which the determination of the population comprises the steps of: (1) determining a first list of samples classified by decreasing amplitude, and (2) modifying the first list by withdrawal of a predetermined number of samples of lowest amplitude, to form a second list. The steps of determining and modifying are reiterated by taking the second list of an iteration as the first list for the next iteration, provided that the predetermined number of lists has not been reached and that the second list has a non-zero number of samples.

Among other notable features of Claim 15 are determining a first list of samples classified by decreasing amplitude, and modifying the first list by withdrawal of a predetermined number of samples of lowest amplitude, to form a second list, the steps of determining and modifying being reiterated by taking the second list of an iteration as the first list for the next iteration.

At page 5 of the Office Action, the Examiner interprets the claimed lists as the "DCT blocks" of *Ji*, and the claimed iterations as all the DCT blocks being processed one after the other. As understood from *Ji*, for example at part V.A., page 2840, each DCT block is processed to give a new vector X, which in turn is processed through a permutation coding step.

The method of Claim 15, in stark contrast, recites that steps of determining and modifying are reiterated by taking the second list of an iteration as the first list for the next iteration. By virtue of the features of Claim 15, the method can construct a population of lists which have a common core.

Ji fails to teach or suggest these features. Indeed, by interpreting the DCT blocks of *Ji* as lists, the second list would be the selected significant coefficients of a block (after withdrawal of lowest magnitude coefficients). Then, *Ji* fails to recite that this second list of selected significant coefficients is used in the next iteration, i.e. in the calculation on the next DCT block. More precisely, *Ji* fails to teach or suggest that the coefficients of a first block are used as first list of coefficients for another block. This is because, in *Ji*, the first list of coefficients for another block is calculated from the DCT coefficients, without considering the preceding DCT block or corresponding vector X.

Nothing in *Ji* would teach or suggest determining a first list of samples classified by decreasing amplitude, and modifying the first list by withdrawal of a predetermined number of samples of lowest amplitude, to form a second list, the steps of determining and modifying being reiterated by taking the second list of an iteration as the first list for the next iteration, as recited in Claim 15.

Accordingly, Claim 15 is seen to be clearly allowable over *Ji*.

Independent Claim 46 recites features which are similar in many relevant respects to those discussed above with respect to Claim 15 and therefore is also believed to be patentable over *Ji* for at least the reasons discussed above.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

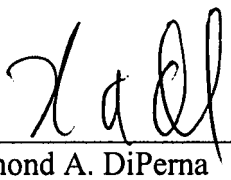
The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

An Information Disclosure Statement will be submitted shortly.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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